

Part 1 of Volume XXIV:

Delaware and Hudson Canal Company The Birth and First Maturity of Industrial America



D&H No. 7, E. A. Quintard, parked at Union Station, Carbondale. Photo in the Jim and Maureen Clift collection, Keens, PA, that was presented to the Carbondale D&H Transportation Museum by Hank Loftus, on October 23, 2014. Jim Clift is the grandson of William R. Clift, who worked for the D&H, and who is seen in this photograph on the far right.

By

S. Robert Powell, Ph.D.

October 9, 2018

Published by the Carbondale Historical Society and Museum, Inc.

Carbondale, PA 18407

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Published by the Carbondale Historical Society and Museum, Inc.
Carbondale, PA 18407 www.carbondalepahistorical.org
October 9, 2018, First Edition

634 pages, illustrated

A History of the
Delaware and Hudson Canal Company
in 24 Volumes

S. Robert Powell, Ph.D., 1974
Indiana University, Bloomington, IN

I	Gravity Railroad: 1829 Configuration
II	Gravity Railroad: 1845 Configuration
III	Gravity Railroad: 1859 Configuration
IV	Gravity Railroad: 1868 Configuration
V	Gravity Railroad: 1899 Configuration
VI	Waterpower on the Gravity Railroad
VII	Working Horses and Mules on the Gravity Railroad
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IX	Farview Park
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XXIII	The Quality of Life in the Lackawanna Valley in the Nineteenth Century
XXIV	The Birth and First Maturity of Industrial America

Acknowledgements

These volumes on the history of the D&H would not exist if John V. Buberniak and the author had not met one afternoon in the autumn of 1981 in the Board Room of the Carbondale Public Library, where they were both doing research, in the nineteenth-century newspapers in the Library's holdings, on the Delaware and Hudson Canal Company's Gravity Railroad from Carbondale to Honesdale. The intellectual partnership that was established that day is the seed that grew, during the past 37 years, and has become the present 24-volume history of the D&H.

John's in-depth knowledge of the D&H Gravity Railroad, the steam lines of the D&H, the mining operations of the D&H, and the corporate history of the D&H is everywhere present in the twenty-four volumes in this series, which could not have been written without his in-put and guidance.

Here are two photographs of John that were taken during the early days of the Carbondale Historical Society and Museum: John and the author, as "dignitaries", riding in a Pioneer Days Parade; John as an officer to the newly formed Carbondale Historical Society and Museum (also shown are Howard Yepson, the author, Bob Tomaine, and Hank Loftus):



Overview

The industrial revolution in America was born on October 9, 1829, in Carbondale, PA, when the first cut of Delaware & Hudson Gravity Railroad coal cars, loaded with mass produced anthracite coal, headed up Plane No. 1 out of Carbondale for Honesdale and to market in New York City.

Those cars, filled with anthracite coal from mines in Carbondale, traveled over 16 miles of railroad tracks, made up of eight inclined planes and three levels, to Honesdale, where the coal was transferred into canal boats and hauled 108 miles, through the D&H Canal, to the Hudson River.

Most of the coal that was sent through the D&H system in the course of the nineteenth century was shipped south on the Hudson River to the New York metropolitan market and to many ports on the Atlantic seaboard, north and south of New York. A large quantity of anthracite coal was also shipped up the Hudson River to Albany, and shipped through the Erie Canal to the American Midwest.

The mining, manufacturing, and transportation system that became operational on that day between the anthracite mines of the Lackawanna Valley and the retail markets for that coal on the eastern seaboard and in the American Midwest was the product of enlightened entrepreneurial, technological, and managerial thought on the part of the officers, managers, directors, and employees of the Delaware and Hudson Canal Company. That system, the first private sector million-dollar enterprise in American history, was, at the same time, the pioneer expression on this continent of mass production, a mode of production that would thereafter characterize industry in America and around the world.

Mass production, the revolutionary engine that made it possible for the D&H to launch its mining, manufacturing, and transportation system in Carbondale on October 9, 1829, and to perpetuate that system well into the 20th century, came into existence when it did and lasted for as long as it did because a body of employees

and managers, within the context of a community, of which both groups were a part, chose to work together for their mutual benefit and enrichment, to mass produce and market a commodity, and in so doing to implement the clearly articulated production and marketing objectives of “the company,” the Delaware and Hudson Canal Company.

In this 24-volume work on the D&H,* we will (1) document the history of that mining, manufacturing, and transportation system, with a special focus on the rail lines of the Delaware and Hudson Canal Company in northeastern Pennsylvania, from the opening of the D&H Gravity Railroad in 1829 to the anthracite coal strike of 1902; and (2) demonstrate that the history of that mining, manufacturing, and transportation system, the D. & H. C. Co., from 1829 to 1902, is, at the same time, not only an illustration of eight decades of fine tuning by the D&H of their mass production procedures and techniques but also a full-bodied expression and record, both from the point of view of the D&H and from the point of view of its employees, of the birth, development, and first maturity of the industrial revolution in America.

This is a success story, directed by America’s pioneer urban capitalists, and implemented by them and the tens of thousands of men, women, and children who emigrated from Europe to the coal fields of northeastern Pennsylvania in the nineteenth century to work for and with the D&H and to start their lives over again. This is a success story that is important not only within in the context of local, state, and regional history but also within the context of American history. It is a compelling story.

*The present volume focuses on *The Birth and First Maturity of the Industrial America*. Each of these 24 volumes will focus on one aspect of the history of the Delaware and Hudson railroad, from the opening of the Gravity Railroad in 1829 to the anthracite coal strike of 1902. Each volume will be an autonomous entity and published separately.

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2401

An American Success Story

The history of the D&H is a success story that was directed by America's pioneer urban capitalists, and implemented by them and the tens of thousands of men, women, and children who emigrated from Europe to the coal fields of northeastern Pennsylvania in the nineteenth century to work for and with the D&H and to start their lives over again. The history of the D&H is a compelling story that is important not only within the context of local, state, and regional history but also within the context of American history.

2402

First Maturity of Industrial America

The industrial revolution in America was born on October 9, 1829, in Carbondale, PA, when the first cut of Delaware & Hudson Gravity Railroad coal cars, loaded with mass produced anthracite coal, headed up Plane No. 1 out of Carbondale for Honesdale and to market in New York City.

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The mining, manufacturing, and transportation system that became operational on that day between the anthracite mines of the Lackawanna Valley and the retail markets for that coal on the eastern seaboard and in the American Midwest was the product of enlightened entrepreneurial, technological, and managerial thought on the part of the officers, managers, directors, and employees of the Delaware and Hudson Canal Company. That system, the first private sector million-dollar enterprise in American history, was, at the same time, the pioneer expression on this continent of mass production, a mode of production that would thereafter characterize industry in America and around the world.

Mass production, the revolutionary engine that made it possible for the D&H to launch its mining, manufacturing, and transportation system in Carbondale on October 9, 1829, and to perpetuate that system well into the 20th century, came into existence when it did and lasted for as long as it did because a body of employees and managers, within the context of a community, of which both groups were a part, chose to work together for their mutual benefit and enrichment, to mass produce and market a commodity, and in so doing to implement the clearly articulated production and marketing objectives of “the company,” the Delaware and Hudson Canal Company.

In Volumes I-XXIII in this 24-volume work on the D&H, we documented the history of that mining, manufacturing, and transportation system, with a special focus on the rail lines of the Delaware and Hudson Canal Company in northeastern Pennsylvania, from the opening of the D&H Gravity Railroad in 1829 to the anthracite coal strike of 1902.

We also demonstrated that the history of that mining, manufacturing, and transportation system, the D. & H. C. Co., from 1829 to 1902, was, at the same time, not only an illustration of eight decades of fine tuning by the D&H of their mass production procedures and techniques but also a full-bodied expression and record, both from the point of view of the D&H and from the point of view of its employees, of the birth, development, and first maturity of the industrial revolution in America.

When did the industrial revolution in America in the nineteenth century reach its first maturity? What were the characteristics of the industrial environment at that time which make it possible to identify that environment as being in its first maturity?

The answer to those questions is directly related to the relationship between labor and management. For most of the nineteenth century, management had a free hand to conduct business as they saw fit. Management provided the capital to bring into existence the company it needed to accomplish its objectives. It identified and created the jobs that had to be performed to accomplish its objectives. It determined the salaries that would be paid to those persons who performed those jobs. It determined the number of hours per day that those persons would perform those jobs. It determined their salaries. A virtually unlimited number of job candidates, from all over Europe, were available to perform those jobs on whatever terms management established.

Such was the nature of the industrial environment until the 1870s, when the voice of labor was first heard in the anthracite coal fields of northeastern Pennsylvania. In Volume XIII in this D&H series (“Troubled Times--the 1870s”), we looked closely at the industrial environment in the anthracite coal fields of northeastern Pennsylvania from the 1870s to the end of the nineteenth century. Throughout those three decades the voice of labor was heard by all except management. Said management to job candidates: “This is the job to be performed. If you would like to work

for us, these are the terms of employment. If you accept these terms, we will hire you to do the job. If you can't accept these terms, the person standing behind you in line may well accept these terms. In which case, we will hire him."

Such was the industrial environment until the 1902 Anthracite Coal Strike, which we looked at in detail in Volume XXI in this series, "The Anthracite Coal Strike of 1902", when the voice of labor was first heard by management. At that time, the largely unionized workforce struck, which effectively closed down the anthracite industry. Management, for its part, chose not to recognize the union or its "demands". That confrontation between capital and labor is among the most significant events in American labor and industrial history.

President Theodore Roosevelt intervened, as is well known, and both labor and management agreed to resolve their differences through the impartial arbitration of the Anthracite Coal Commission. That resolution of the 1902 coal strike had important national repercussions and marked a fundamental shift in the relations between the federal government and American business.

The 1902 anthracite coal strike was an important watershed in the labor history of the anthracite coal region and in the history of labor/management relations in American history in that it made it very clear to all that in any conflict between management and labor, the interests of a third party, the public, are paramount. At that moment, the industrial revolution in America, which was set in motion when the Delaware and Hudson Canal Company began to ship anthracite coal from the Lackawanna Valley, reached its first maturity.

A second maturity for industrial America? Yes, in the twentieth century when the Federal government and Federal regulations took control of the industrial environment.

A third maturity for industrial America? Yes, when industrial America, in the late twentieth century and early twenty-first century more or less moved out of America because, tragically, the profit potential of industrial America was greater outside America than in America.

2403

A Closer Look at Mass Production

What was new and different about what took place in America when the D&H mining, manufacturing, and transportation system became operational on October 9, 1829 in Carbondale? What was revolutionary about the D&H's mining, manufacturing and transportation system? Why did the start of operations on the D&H Gravity Railroad herald something new in American life?

The answers to those questions are all directly related to (1) the concept of mass production and, (2) the spatial and temporal context within which that mass production took place. Taken together, that concept in that context resulted in the American Industrial revolution.

The term *industrial revolution* is not synonymous with machine production, although an industrial revolution cannot take place without machines. Similarly, when we say industrial revolution, we do not mean merely the production of a large quantity of a particular commodity, although large scale production is frequently a quality of an industrial revolution. Similarly, when we say industrial revolution we do not mean solely production in factories, although factories and the factory system were an important part of the industrial revolution in America.

Mass production, the revolutionary engine that made it possible for the D&H to launch its mining, manufacturing, and transportation system in Carbondale on October 9, 1829, and to perpetuate that system well into the 20th century, came into existence when it did and lasted for as long as it did because a body of employees and managers, within the context of a community, of which both groups were a part, chose to work together for their mutual benefit and enrichment, to mass produce and market a commodity, and in so doing to implement the clearly articulated production and marketing objectives of “the company,” the Delaware and Hudson Canal Company.

Mass Production: The Concept

Mass production, with mass consumption by existing and new markets stimulating production, is founded on three primary principles: (1) the analysis of operations into their constituent parts, (2) the planned orderly progression of a commodity through the system, and (3) the delivery of materials to the workman, instead of leaving it to the workman’s initiative to procure them.

Given the complexity of the task to be performed--to market anthracite coal in New York City--the D&H Canal Company, headquartered in Carbondale had to identify and analyze the objectives of each of the multitude of steps involved in performing that task.

One can hypothesize, in a summary and overly simplified manner, the phases of that process as follows: acquire title to particular coal lands, hire personnel to mine that coal, mine the coal, create and staff a transportation system to get that coal to market, transport the coal from the mine to the beginning of the transportation system that will take it to market, move it through the system, market that coal to consumers—all that in a wilderness area with no infrastructure or internal improvements of any kind.

Having identified the constituent parts of the task to be performed, the establishment of a logical and meaningful sequence of steps to be taken to produce and market the coal is, for the appropriately configured managerial mind, a fairly straightforward process.

Finally, and very importantly if mass production is to take place, the materials/the product—anthracite coal—must be delivered to the workman in the system, it not being necessary in order for the workman to perform his individual task to locate, on his own initiative, the product. The importance of this last point cannot be overstated: the work to be accomplished moves to the worker. When, and only when, those three principles are in place and operational can mass production take place.

With those principles in place and operational, the D&H created what can be regarded as a gigantic conveyor belt/assembly line that extended from the foot of Plane No. 1 in Carbondale in the Lackawanna Valley in Pennsylvania to the retail markets in metropolitan New York City and elsewhere. All along that “conveyor belt”—the D&H Gravity Railroad, the D&H Canal, the Hudson River coal transport system (among several) established by the D&H—D&H employees were stationed. The coal came to them. They performed their job, which was to keep the coal moving. A shut down at any point in the entire system had major consequences all along the line: the breakdown of a stationary engine on the Gravity Railroad, a wash-out at one of the locks on the canal, for example, meant that the “conveyor belt” had to be temporarily stopped. When the necessary repair was made, the “conveyor belt” once again was set in motion.

Mass production, usually thought of as a twentieth-century phenomenon associated with the conveyor belts of the American automobile industry began, it can be argued, when the D&H’s mining, manufacturing and transportation system became operational on October 9, 1829. The officers, managers, directors, and employees of the Delaware and Hudson Canal Company were the pioneers. Other companies and enterprises quickly adopted that system.

What was new about life and the way people lived their lives in the Lackawanna and Wyoming Valleys of Pennsylvania and in America in the nineteenth century?

Beginning with the opening of the D&H Gravity Railroad and Canal, there was a new rhythm for life in the Lackawanna and Wyoming Valleys and all along the D&H canal.

In pre-industrial America, the rhythm of the seasons/natural/empirical cycles was the rhythm of life. One lived according to “natural” cycles. Time was life, and life was the completion of the tasks vital to its own preservation. Natural rhythms constituted the overarching framework within which all experience took place: mankind slept when natural light failed, planted and reaped as the seasons dictated, and struggled against the rigors of the environment to maintain life itself. One’s work was a way of living one’s life. Farming, for example, was more a way of life than a way of making money. If you were a farmer or a silversmith, for example, you were a farmer or a silversmith 24 hours a day.

Before 1815, life was seen as a continuous, coherent whole, as an indivisible combination of labor and play, of effort and enjoyment, not as a rigorous dichotomy of work and non-work. The pre-1815 passage of time and generations ended with the transition to urban and industrial existence.

In industrial America, the ticking of the clock established the rhythm of life. There was work time and there was non-work time. Time was money. If you were the headman on Plane No. 7, for example, you stopped being the headman on Plane No. 7 at the end of your shift/work-day, and you went home.

In the course of the nineteenth century there evolved the urban, industrial, proletarian, seasonless style of living that has now become America. That new mode of life was essentially the lifestyle of the many thousands of immigrants who came here to start their lives over again--and they embraced America and the rhythm of life that was America.

Coming here, for those many thousands of immigrants, was tantamount to being re-born. Life, they knew, would be difficult, but life, they knew in their hearts, would be better for their children and their childrens' children.

One of the most extraordinary advances made in the course of the nineteenth century was in the standard of living of the masses of the people. That point is underlined by Scott Kester in his April 2000 Master of Arts thesis ("The Pennsylvania Coal Company Gravity Railroad", pp. 29-30), Department of History, University of Scranton, in which he cites Walter Licht, *Industrializing America: The Nineteenth Century*, Baltimore, 1955, p. ix (from editor's foreword by Stanley I. Kutler) as follows:

"On an ideological level, the age of the nineteenth century was often viewed by the people living in it as an age of unsurpassed and unprecedented progress. Things it was commonly believed, were getting better all the time. This itself was a belief system, one that was religious in the true sense of that word. All people have a belief system of some kind, and all also have faith of some kind in their convictions, whatever those convictions might be and however the people have acquired them. Nineteenth century Americans were no exception. 'Throughout the western world in the nineteenth century,' writes Stanley I. Kutler, 'progress and material change amounted to a form of secular worship.' "

At the same time, as we demonstrated in Volume XXIII in this D&H series, there was a very high quality of life in the nineteenth century in the anthracite coal fields of Pennsylvania.

When you look at Carbondale today from the scenic overlook on the Casey highway, you see very little of the "industrial revolution" that took place here in the nineteenth century. The railroads and breakers and culm piles are largely gone. The streams run clean, with fish, and wild life are found in abundance. The Lackawanna Valley is largely a pristine valley once again.

It is interesting to think about this transformation of the Lackawanna Valley in the course of the nineteenth and twentieth centuries, and then again about the transformation of the Lackawanna Valley in the twentieth century, in terms of the interesting observation by Will Durand in *Our Oriental Heritage* on the precarious survival of civilization:

“Civilization, like life, is a perpetual struggle with death. And as life maintains itself only by abandoning old, and recasting itself in younger and fresher forms, so civilization achieves a precarious survival by changing its habitat or its blood. It moved from Ur to Babylon and Judea, from Babylon to Nineveh, from these to Persepolis, Sardis and Miletus, and from these, Egypt and Crete to Greece and Rome. / No one looking at the site of ancient Babylon today would suspect that these hot and dreary wastes along the Euphrates were once the rich and powerful capital of a civilization that almost created astronomy, added richly to the progress of medicine, established the science of language, prepared the first great codes of law, taught the Greeks the rudiments of mathematics, physics and philosophy, gave the Jews the mythology which they gave to the world, and passed on to the Arabs part of that scientific and architectural lore with which they aroused the dormant soul of medieval Europe. Standing before the silent Tigris and Euphrates one finds it hard to believe that they are the same rivers that watered Sumeria and Akkad, and nourished the Hanging Gardens of Babylon. / In some ways they are not the same rivers: not only because ‘one never steps twice into the same stream,’ but because these old rivers have long since remade their beds along new course, and ‘mow with their scythes of whiteness’ other shores. . .” (Will Durand. *Our Oriental Heritage*, Simon and Schuster, 1954, p. 218)

One of the very important by-products of the nineteenth and twentieth centuries, the quality of life associated with the mining and railroad industries in northeastern Pennsylvania (see Volume XXIII in this series) is, for the most part, also gone--and there's very little, if anything, that anyone can do about it.

D&H Management

The D&H was blessed with excellent managers whose management style contributed significantly to the success of the D&H from its birth as a corporate entity in the early years of the nineteenth century to the dissolution of the company in the late twentieth century.

At the request of the Managers of the D&H, a committee was named on May 8, 1877, to examine the business, operations, history, policies, prospects, and equipment of the D&H. In their report, dated August 11, 1877, the committee said the following about the management style of the D&H:

". . . [I]t may be said that your committee were particularly struck with the system of government, which is *a system of individual responsibility coupled with commensurate power*. Each head of a department is absolutely supreme within his division. He acts under general instructions only, and all details are left to him; but he is held accountable for results. This system extends throughout the whole service. Both President and General Manager, from life long experience, are familiar with details, yet they do not interfere with the methods of superintendents so long as results are satisfactory. This system produces the perfection of discipline, stimulates ambition throughout the whole force, promotes the growth of men, and wins for the corporation and its executive an intense loyalty. The opposite policy subverts discipline, kills ambition, and makes mere machines of discontented men."

For many years, John V. Buberniak did extensive research on the management of the D&H and in 2007 published, as a Power Point presentation, his findings. Here is the title page of that publication:

**The President, Managers and
Company of The
DELAWARE and HUDSON
CANAL COMPANY**

**A Compilation of historical, pictorial and
Biographical records of the officers and
management from
1825 to 1982**

Compiled and written by

John V. Buberniak

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The complete text of that book by John V. Buberniak is given as Part 2 and Part 3 of Volume XXIV in this series.

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Click on “Part 2, Volume XXIV” on this DVD to read the first part of that presentation (pp. 18-267).

Click on “Part 3, Volume XXIV” on this DVD to read the second part of that presentation (268-357).

When you have finished reading “Part 3, Volume XXIV,” click on “Part 4, Volume XXIV”.

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